The PIGMY SPERM WHALE (*KOGIA BREVICEPS*, Blainville) on SOUTH AUSTRALIAN COASTS

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Plates xiv–xviii and Text Fig. 1–17.

It is now possible to list three localities at which the Pigmy, or Short-headed, Sperm Whale (*Kogia breviceps*) has been taken in South Australia.

The first record of the species on the coast of this State is furnished by Wood Jones (1925, p. 279) who notes a lower jaw secured at Encounter Bay about 1885.

The Pigmy Sperm Whale was not noticed again in South Australia until April 25, 1937, when a mature female was stranded alive at Port Victoria, in Spencer Gulf. At the same time a smaller example, which was seen to be accompanying the adult prior to her misfortune, was observed swimming close inshore, and later on the same date this individual—which proved to be a young female—also was cast up on to the beach. Thanks to the efforts of Mr. H. E. A. Edwardes, of Port Victoria, both specimens were secured, carried over some cliffs and transported to the South Australian Museum, where measurements were made and casts and skeletons prepared. The calf was evidently still suckling at the time, for the mammary glands were active in the mother; the uterus of the last-named contained a foetus about 20 cm. in length. A brief record of this occurrence was made by the writer (1939, p. 7) and some further details of the three specimens are given herein.

Thirdly, in August, 1944, Miss N. M. Follett furnished a description and a drawing of a "large fish 7 to 8 feet in length" which had come ashore in the vicinity of Sleaford Bay, near Port Lincoln. Miss Follett's excellent account showed it to be a *Kogia*. Recovery of this material proved even more difficult than in the case of the Port Victoria examples and necessitated a journey of sixteen miles over a rough track and then the crossing of a mile or so of high sandhills. Finally, a month after the stranding, the skull and some other bones were collected for the Museum.

It should be noted that the plaster casts of the Port Victoria female and calf now exhibited in the South Australian Museum are of one side only and are not necessarily accurate in regard to measurements, as the contour does not occur along a truly sagittal section. Furthermore, the pectoral limbs were removed

by the preparators before moulding thus resulting in slight distortion in their region.

I am indebted to Miss Gwen D. Walsh for preparation of most of the drawings and photographs illustrating this paper.

NOTES ON EXTERIOR OF ADULTS AND CALF.

The colour of both cow and calf from Port Victoria was jet black above and on the sides, fading into the white of the underside from back of the mouth to a little posterior to the anus. Miss Follett describes the Sleaford Bay example as blackish brown above and reddish below but this difference in colouration may have been due to post-mortem changes.

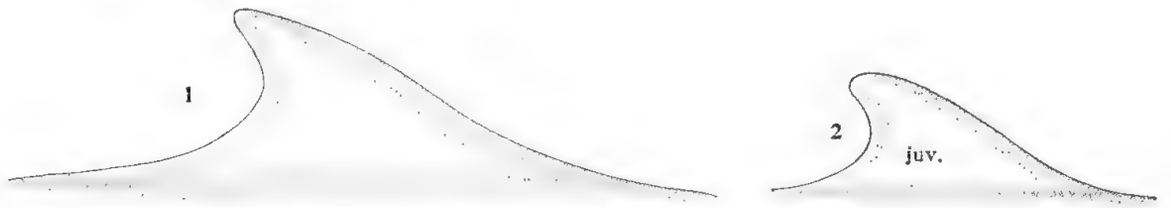

Fig. 1–2. Dorsal fins of adult female and calf from Port Victoria (1/5 nat. size).

Scale drawings of the cow and calf from Port Victoria are reproduced on Plate xiv. In size this adult female approaches the largest of the five definitely breeding females previously recorded (Allen, 1941, pp. 24–25).

The body is less than four times as long as greatest depth. The snout is deep and blunt, and in front of the mandible it curves forwards and upwards for a short

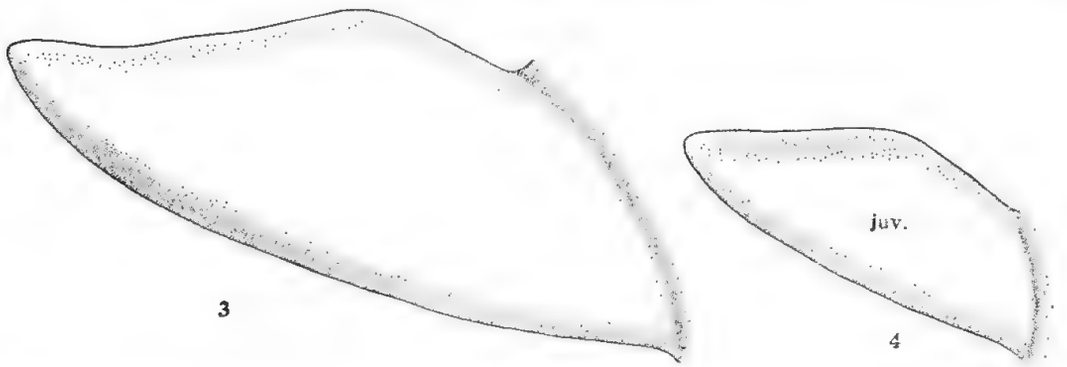

Fig. 3–4. Pectoral limbs of adult female and calf from Port Victoria (1/5 nat. size).

distance then suddenly rises steeply, with little forward inclination, to a rounded dorsal "point."

The falcate dorsal fin (text fig. 1) is about three and one half times as long as high and is placed just behind the middle of the length. The pectoral limb is two and three-fourths times as long as deep (text fig. 3).

In the female calf from Port Victoria the body is relatively plumper than in the adult, being less than four times as long as deep; the origin of the dorsal fin is slightly further behind the middle of the length. This fin is falcate (text fig. 2) and is three times as long as wide while the pectoral limb (text fig. 4) is a little shorter in proportion to its width than in the adult and is also shorter in relation to the total length of the animal. The snout as seen from the side exhibits quite considerable difference in shape, curving upwards and forwards from the distal end of the mandible much more obliquely than in the mother (see pl. xiv).

It is generally considered that the specimens of *Kogia* so far secured in both northern and southern hemispheres represent only one species; from the literature there is little or no evidence for the separation of two or more forms on external or skeletal characters.

There are few good illustrations of the exterior of *Kogia*. According to most published descriptions, but not always to the illustrations, the origin of the dorsal fin occurs at, or a little posterior to, the middle of the total length of the animal An exception may be the New South Wales example recorded by Krefft (1865, p. 708, fig. 1) in which the total length is given as 10 ft. 8 in., the distance before dorsal fin as 5 ft. 3 in.; Krefft's figure, however, shows the fin as arising well behind the middle of the length.

Allen (1941, pp. 28–29) notes that in a large male from Massachusetts the dorsal fin was low and narrow while in an adult female from Virginia it was nearly twice the size. In Allen's female the height of this fin was distinctly more than one-half of its basal length and at least one-fifteenth of the total length of the animal; the aforementioned author remarks that future observations may show whether or not this is a normal sexual difference. The female from Madras figured by Owen (1866, pl. x–xi) similarly has a high dorsal, and this applies also to the example from Ceylon illustrated by Pearson (1920, pl. i; sex not given).

Of southern examples the data previously published refer to unsexed material. Oliver (1922, p. 567, pl. ii, fig. 3) illustrates an example from Wanganui, New Zealand, with the dorsal fin very little smaller than in the aforementioned northern females; he notes that at least eleven specimens of *Kogia* "have been cast ashore in New Zealand during the past 40 years." The last-named author says of another New Zealand example, "Dorsal fin small, falcate." In the New South Wales specimen described by Wall (1851) it seems to have been much as in the Port Victoria female, while the poor illustration of Krefft (1865, fig. 1) shows this fin as low and rounded.

As noted above, in both the adult female and female calf from Port Victoria the height of the dorsal fin is, at most, one-third of the length of the fin; further, the height is equal to only about one-thirtieth of the total length of the animal.

Thus it would seem from available evidence that the fin is subject to considerable individual variation; on the other hand more adequate information regarding this and other features may show that geographic races or subspecies exist.

NOTES ON EXTERIOR OF FOETUS.

The Port Victoria foetus is a male. The most striking general features as compared with the adult are the shape of the relatively large head and the anterior position of the nostril (text fig. 5). From the vertex to the front of the snout the

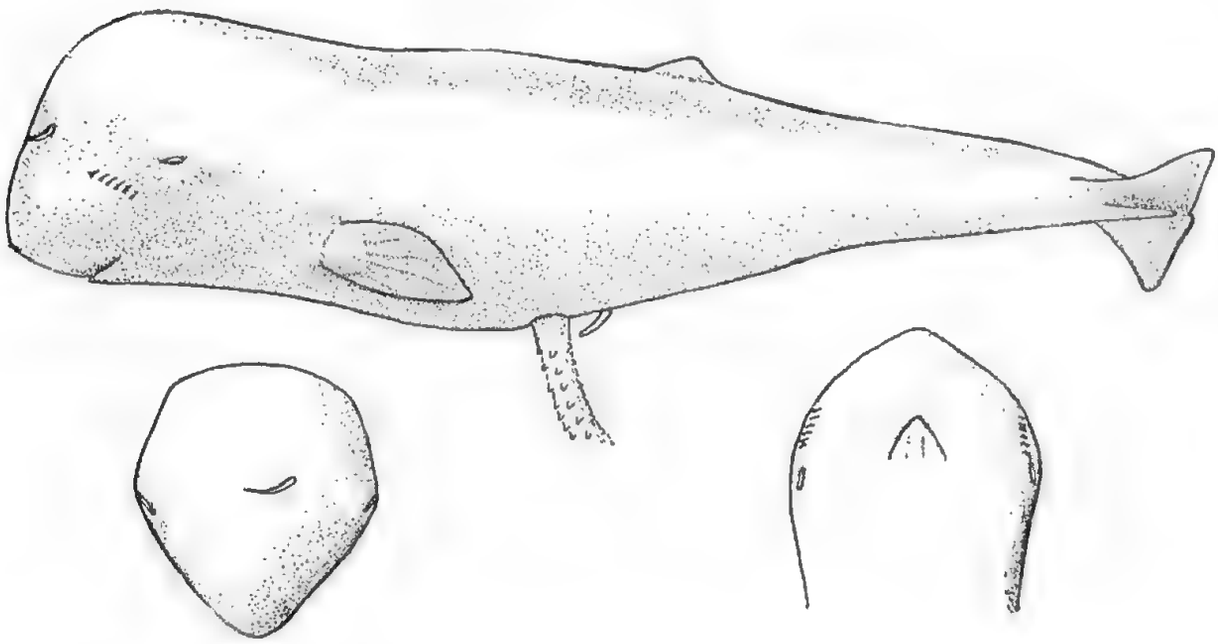

Fig. 5. Male foetus from Port Victoria; whole animal from the side, and anterior and ventral views of head (⅔ nat. size).

head slopes downwards very much more abruptly than in the more advanced foetus recorded by Allen (1941, fig. 1) and is more like the large foetus (1,097 mm.) described by Schulte and Smith (1918, p. 7, fig. 1). The crescentic nostril lies for the greater part to the left of the mid-line and is directed upwards to the left (text fig. 5); its lowest point is barely above the level of the upper edge of the eyes. The last-named are slightly asymmetrical as regards position, the left eye being 1 mm. closer to the front of the snout than the right. In advance of, and immediately below each eye is an oblique row of six minute, backwardly curved vibrissae, each of which projects from a pit; the second and third hairs of the

left side are placed closely together but the rest, including all of those on the right are evenly spaced. Schulte and Smith (1918, p. 11) state that, in the foetus examined by them, "Four hairs, arranged in an oblique line, were present in front of the eye," and state further that the intervals suggest a fifth in the middle of the series. Allen (1941, p. 28) found in his foetus, "four short, tapering bristles placed in an oblique row in front of each eye." The last-named author describes five well-marked grooves on the throat but in the specimen now recorded the skin in this area is perfectly smooth, possibly due to its earlier stage (text fig. 5, lower right).

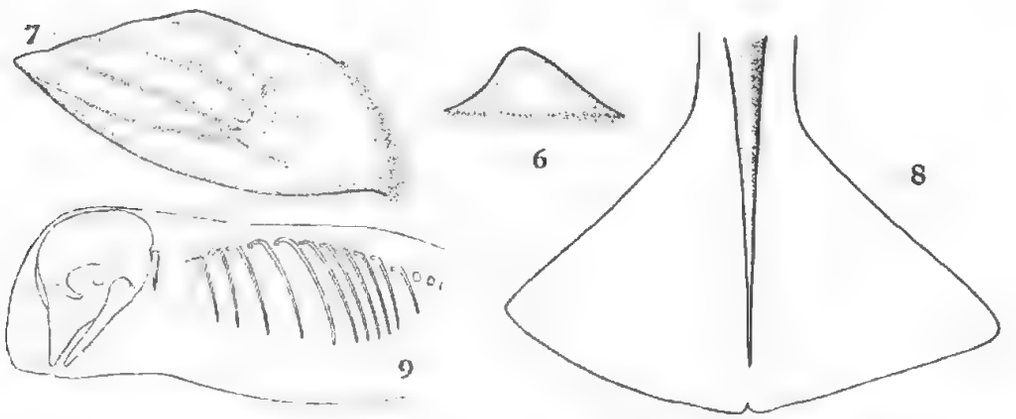

Fig. 6–9. Male foetus from Port Victoria; 6–8, dorsal, pectoral and caudal fins (× 1½); 9, tracing of X-ray of head and thorax to show position of skull, etc. (⅔ nat. size).

The body of this small foetus is a little more than four times as long as deep. The dorsal fin is not falcate but is triangular and low, being considerably less than three times as long as high (text fig. 6); it is placed distinctly posterior to the middle of the length. The pectoral limb is not quite two and one-half times longer than deep; the digits are visible through the thin exterior tissues but an X-ray photograph discloses no ossification of phalanges, etc. (text fig. 7).

The caudal fin (text fig. 8) has not yet developed backwardly flaring flukes, the posterior margin of the fin being convex; the lateral edges are almost straight and a small median posterior notch is present.

A photograph of the foetus secured immediately after removal from the uterus accompanied the writer's original brief record of the Port Victoria material (Hale, 1939, p. 7).

The measurements given herein for it are taken from the formalized specimen; its total length before preservation was slightly greater, viz. 203·2 mm. It should be added that the measurement from tip of snout to anus is 132 mm.

External measurements of *Kogia breviceps*, Port Victoria, South Australia.

	Adult ♀		Juvenile ♀		Foetus.	
	mm.	per cent.	mm.	per cent.	mm.	per cent.
Total length to notch of tail flukes	2,897	100	1,710	100	193	100
Greatest depth of body	660	22·8	470	27·5	47	24·4
Tip of snout to vertical level of anterior corner of eye	337	11·6	229	13·4	24	12·4
Tip of mandible to vertical level of anterior corner of eye	229	7·9	140	8·2	10	5·2
Tip of snout to vertical level of anterior edge of dorsal fin	1,499	51·7	915	53·5	103	53·4
Tip of mandible to axilla	610	21·1	380	22·2	40	20·7
Tip of mandible to anterior point of genital slit	1,919	66·2	—	—	78	40·4
Width of flukes	700	24·2	410	24·0	34	17·6
Height of dorsal fin	91	3·1	63	3·7	4·5	2·3
Length of base of dorsal fin	322	11·1	185	10·8	12·5	6·5
Length of pectoral fin along anterior edge	397	13·7	216	12·6	28	14·5
Greatest width of pectoral limb	144	5·0	84	4·9	11·5	6·0
Length of gape	150	5·2	77	4·5	8·5	4·4
Length of eye	31	1·1	22	1·3	4·0	2·1
Depth of eye	17	0·6	14	0·8	—	—

THE SKELETON.

Adult female, Port Victoria. The skull (pl. xv, fig. 1–5) is almost one-seventh of the total length of the whole animal (see Schulte, 1917, p. 366). Fusion of the sutures is much more advanced than in the Sleaford Bay example described below.

The rostrum from tip to anterior wall of left nostril is decidedly more than half of the total length of skull. The supraoccipital, as seen from the side, is concave and the condyle is prominent. The frontal is not distinctly marked off from the occipital complex. The lateral surface of the left maxilla is deep, two-thirds as deep again as the right. The maxillo-malar suture on the left side has a V-shaped downward projection at about first fourth of length of malar, where the suture sweeps abruptly upward; at the rear the suture curves downwards and thus the malar, measured along this suture, is longer than deep. The maxillo-malar suture of the right side is in the form of one very wide V, the caudal two-thirds being almost horizontal.

The mid-facial crest overhangs the fossa of the left maxilla strongly in its rostral half. The right premaxilla reaches the summit of the crest at the vertex where both it and the left maxilla are swollen and equally elevated, with the suture between almost obliterated. The prefrontal is truncate in front and forms a high thin crest between the nares; this ethmoidal part of the crest fades out just before the anterior end of the sagittal crest formed by left maxilla and right premaxilla.

The maxillae below the anterior parts of the transverse crest are thicker than in the younger Sleaford Bay example; the greatest width across the maxillae to

the maxillo-malar sutures is one and two-fifths times the distance between the vertex and the level of the antorbital processes. The antorbital fissures are correspondingly more oblique than in the Sleaford Bay skull; they are slit-like and almost closed excepting at the fundus.

The palatal surface is moderately convex; a relatively considerable portion (65 mm.) of the premaxilla appears between maxilla and vomer on right side and a smaller part (50 mm.) of the left premaxilla is visible. On each maxilla an alveolar groove extends back from tip for a distance of 12 cm. or so, neither of the furrows nearly reaching to level of antorbital tubercles; the right sulcus is a partly closed irregular fissure; the left is deeper and is crossed not far from tip of rostrum by an oblique bridge. No teeth were discovered.

The width between the postorbital process is greater than elsewhere.

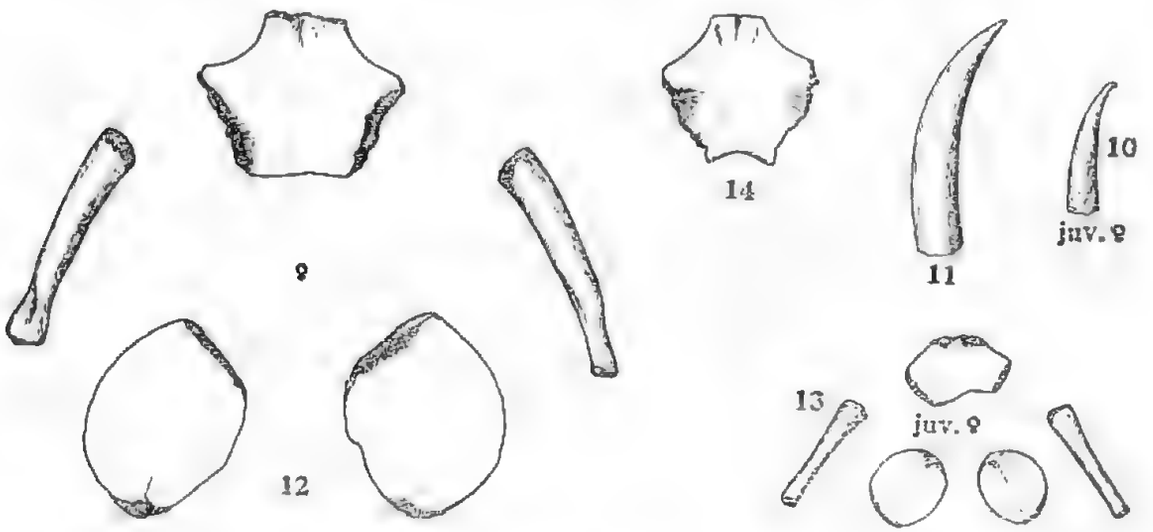

Fig. 10–11. Tooth from Port Victoria female calf and from Sleaford Bay example (approx. nat. size). Fig. 12–13. Tongue bones of adult female and calf from Port Victoria (¼ nat. size). Fig. 14. Basihyal of Sleaford Bay example (¼ nat. size).

The tip of the mandible on one side and some of the teeth are damaged. The teeth are smooth, subequal in size, are evenly curved and apparently numbered thirteen in each ramus.

In the tongue bones (text fig. 12) the basihyal is not subcircular as in the example illustrated by Benham (1902, p. 58, pl. iii) but is hexagonal; the antero-lateral and postero-lateral margins are concave; the anterior articular face is irregular and the posterior edge is barely notched near the mid-line; the bone, measured across the lateral angles, is one-fourth as wide again as long. The thyrohyals are suboval, longer than wide. The stylohyals are curved, slightly twisted bones; the articular face at the proximal end of each is broadly oval in

shape while the distal facet is narrowly oval and, because of the aforementioned twist, its long axis is almost at right angles to that of the proximal end.

The seven cervical vertebrae (pl. xviii, fig. 1–3) are ankylosed into a single unit, the height of which (106 mm.) is approximately three-fourths the greatest width (atlas, 42 mm.) There is a lateral foramen on each side between atlas and axis; posterior and a little below each of these is a larger single foramen, the opening extending apparently between the axis and seventh cervical. Seen from the side the combined neural arches present an unbroken dorsal outline, rising steeply and abruptly elevated at the rear to form a short rounded spine.

There are thirteen thoracic vertebrae. The first (pl. xviii, fig. 4) is free from the cervicals, but its anterior parts are quite closely applied to the posterior face of the neck vertebrae. The neural arch of the first thoracic is not complete, there being a dorsal gap of about 9 mm.; it is triangular rather than suboval, as it is in the other examples now examined (see pl. xviii, fig. 4) and the neural canal is only one-fourth as wide again as deep. In conformity with the asymmetry of the posterior ribs, as mentioned below, on the twelfth thoracic the tubercular facet on the right transverse process is 20 mm. in length and that of the left 30 mm.; the last thoracic has a small articular face on the thickened outer edge of the left transverse process but there is no such facet on the right side.

As in five of the other specimens which have been recorded (Allen 1941, p. 32) there are nine lumbar vertebrae.

The caudals number twenty-six, making a total of fifty five vertebrae, only one less than counted by Allen for the adult female from Virginia (Allen, *loc. cit.*). The metapophyses disappear after the fourth caudal, while the neural canal becomes an open groove on the summit of the thirteenth and disappears after the eighteenth caudal. There are fourteen pairs of chevrons, the members of all but one pair being united.

There are thirteen ribs on the left side but only twelve on the right; the anterior seven pairs have both tubercle and head. It will be noted from the table of measurements that the twelfth pair are markedly asymmetrical and that the right member of this pair, like the thirteenth rib of the left side, is abruptly shorter than the preceding rib. These last ribs are considerably shorter than the corresponding ones in the calf, but are much stouter.

The sternum (text fig. 15) consists of the usual three sections. The manubrium has broad, wing-like lateral expansions in the anterior half, where it is a little wider than its greatest length; in the posterior half the lateral margins are concave and converge towards the truncate hinder face which, like the anterior margin, is shallowly incised medianly. The second segment is less than two-thirds as long as the manubrium, is two-thirds as long again as wide, has concave lateral margins,

is slightly wider at anterior end than it is posteriorly and is medianly incised at front and back. The third segment is irregular posteriorly, with concave sides and has a medianly incised front margin; it is a little less than half as long as the manubrium, and is half as long again as its greatest width, which occurs near hinder end. The two component parts of each piece are completely ankylosed, but on the first and second segments there are interrupted median grooves.

In this specimen, and also in the calf, pelvic bones were specially searched for but none was located.

Female calf, Port Victoria. The skull (pl. xvi, fig. 1–5) is a little more than one-seventh of the total length of the animal (14·6% compared with 14·2% for the mother). The rostrum from tip to anterior wall of left nostril is much shorter than in the two adults described herein, being less than two-fifths as long as total length of skull. The supraoccipital in lateral view is slightly convex; actually along mid-line it is flat. The condyle projects prominently and the foramen is relatively larger than in the adult skulls. The frontal extends to the vertex as a thin strip between the occipital and the maxilla. The lateral surfaces of the maxillae are not deep. The malar is broadly triangular, distinctly longer than deep. On both sides the maxillo-malar suture dips at middle of its length in the form of a wide V. The prefrontal (ethmoid) is damaged but appears to have formed a crest continuous with the rest of the sagittal crest, which strongly overhangs the fossa of the left maxilla. The maxillae below the anterior parts of the transverse crest are only moderately thickened; the greatest width across the maxillae to the maxillo-malar sutures is one and one-fifth times the distance between the vertex and the level of the antorbital processes. The antorbital fissures are almost closed except at the fundus; the fissure of the right side is much more oblique than the other.

The palatal surface is markedly convex. On each side a portion of the premaxilla is visible at the tip, between vomer and maxilla. On each maxilla an open alveolar groove runs back from tip for a short distance (45 mm.) and is continued a further 15 mm. or so as a canal completely bridged by bone except for a tiny foramen on the right side. There is no trace of sockets or of teeth.

The width between the postorbital processes is equal to that between the zygomatic processes of the squamosal.

The tip of the left ramus of the mandible is missing; the right ramus has thirteen teeth subequal in size and differing from those of the adults now recorded in having the tips slightly hooked (text fig. 10).

The tongue bones (text fig. 13) like most of the rest of the skeleton are soft, very light and "chalky," and are easily abraded. The basihyal is very irregularly sexangular and is half as wide again as long. The thyrohyals are subcircular;

the stylohyals are much as described for the adult except that the articular facets on the widened proximal ends are relatively narrower.

The ventral element of the atlas and the rest of the cervical vertebrae are fused together into one solid mass (pl. xviii, fig. 5–7). The dorso-lateral part of the atlas is quite free (pl. xviii, fig. 8) but none of the remaining cervicals is marked off dorsally or dorso-laterally. The height of the cervicals (85 mm.) is slightly less than the greatest width (88 mm.), the latter being that of the free

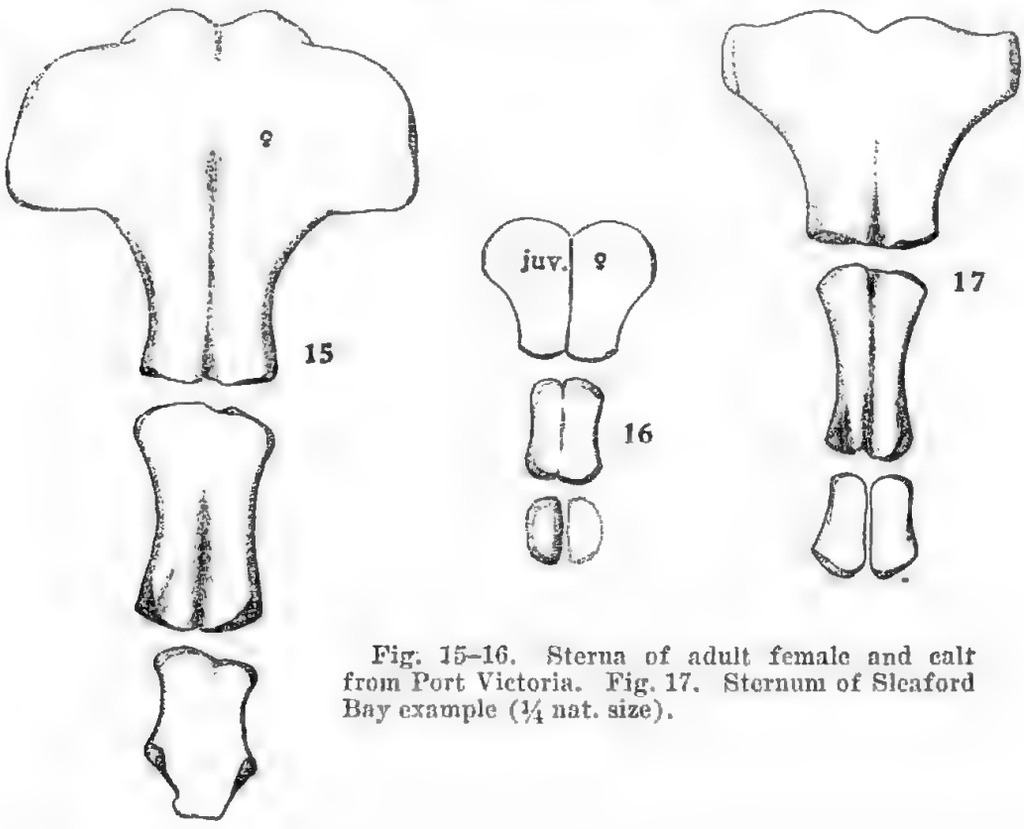

Fig. 15–16. Sterna of adult female and calf from Port Victoria. Fig. 17. Sternum of Sleaford Bay example (¼ nat. size).

portion of the atlas. On the right side of the ankylosed mass there is a large foramen, partially divided by an incomplete bony bar; on the right side two distinct foramina occur posterior to the axis, the hinder one being twice as deep as the other. The median dorsal spine at the rear of the cervical complex is low and rounded. In front of it the mid-line of the mass and of the atlas is sharply ridged, not rounded as in the adult.

The thoracic vertebrae are thirteen in number. The neural arch of the first is complete and the canal is about one-fourth as wide again as deep; on either side, ventrally, a small portion of the centrum is fused with the last cervical (pl. xviii, fig. 6–7). The epiphyses are trapped in the narrow space between cervicals and first thoracic but are quite free.

There are ten lumbar vertebrae and twenty-three caudals, making a total

of fifty-three vertebrae; the posterior caudals, however, are so small and fragile that it is possible that two or three have disappeared during maceration. In only one of the thirteen chevrons are the members of a pair not united. The metapophyses disappear after the third caudal, while the neural canal becomes an open groove on the twelfth caudal and is evanescent on the fourteenth. The ribs are thirteen on each side, the anterior eight pairs have a double articulation, and the ribs further differ from those of the mother in being less asymmetrical posteriorly (see measurements).

Length of ribs of *Kogia breviceps*, Port Victoria, South Australia; the measurements were taken in a straight line from head to free end.

	Adult ♀		Juvenile ♀	
	Right. mm.	Left. mm.	Right. mm.	Left. mm.
1	290	290	120	125
2	410	410	200	200
3	480	485	230	230
4	500	510	240	240
5	495	500	240	240
6	480	485	235	230
7	470	470	230	230
8	445	445	220	220
9	415	420	200	205
10	380	380	190	190
11	360	365	180	180
12	105	340	165	170
13	—	80	145	140

Relative to the total body length the sternum (text fig. 16) is considerably shorter than in the adult. The manubrium, though less expanded in anterior half, is proportionately shorter, and is nearly one-fourth as wide again as long; the two halves are incompletely fused in posterior two-thirds of length, and are separated by a fissure in anterior third. The second segment is one-third as long again as wide; its two parts are firmly fused, with a faint median groove. The third segment is composed of two separate pieces, one of which was damaged in stranding.

Adult, Sleaford Bay. The skull is illustrated on pl. xvii, fig. 1–5. The rostrum as measured from the tip to anterior wall of left nostril is slightly less than one-half of the total length of the skull. In lateral view the supraoccipital is markedly concave and the condyle projects quite considerably. The frontal extends as a thin strip between the occipital complex and the maxilla. The lateral surface of the last-named is not very deep (particularly that of the right side) and that of the malar is broadly triangular in shape (one-third as long again as deep). The maxillo-malar suture on both sides is sinuate and sub-horizontal except for a wide downwardly directed V in anterior half.

The sagittal crest between nostrils and vertex moderately overhangs the fossa

of the left maxilla in its rostral half; the right premaxilla reaches the summit of the crest at some little distance before the vertex, at which it is elevated, although only very slightly, above the left maxilla. The prefrontal is truncate anteriorly but does not extend as far forward in the canaliculate vomer as it does in the Port Victoria female; between the nares it forms a thin crest which is continuous with the rest of the mid-cranial crest but the latter rises abruptly at a right angle just posterior to the level of the nostrils. The area within the transverse maxillary crest is approximately as wide as long; the greatest width across the maxillae to the maxillo-malar sutures is very little greater than the distance between vertex and level of antorbital processes. The antorbital notches are narrow and oblique. The palatal surface is rather strongly convex and on each side a small portion of the premaxilla (length about 25 mm.) is wedged between maxilla and vomer. On the right side a deep and continuous alveolar groove extends back from the front of maxilla for a distance of 108 mm. On the left side the maxillary groove is longer (126 mm.) and reaches almost to level of antorbital tubercles; it is interrupted, in advance of middle of length by a short bony bridge. Apart from this last there are no indications of alveolar sockets and no teeth were present.

The width between the postorbital processes is barely greater than that between the zygomatic processes of the squamosal. As shown by the measurements and photograph (pl. xvii, fig. 5) the occipital foramen is rather narrow.

In the mandible (pl. xvii, fig. 6–7) the dental sulcus is lateral at the tip but slowly rises to the rear, its extreme posterior limit being dorsal in position. The groove in the left ramus is divided into fourteen sockets, each containing a tooth; in the right ramus there are thirteen pits. The anterior eight or nine of the sockets are separated by complete though exceedingly fragile bridges of bone, but the divisions between the posterior ones are much lower. The terminal portion of the sulcus takes the form of a short groove, much narrower and shallower than the preceding sockets. The teeth are smooth, subequal in length and are evenly curved (text fig. 11).

In the tongue bones the basihyal (text fig. 14) is as long as wide and, as in the Port Victoria adult, is markedly hexagonal. It differs, however, in having the posterior edge thin and concave from side to side while at the much narrower front the two articular facets are not confluent; the antero-lateral margins are concave and the postero-lateral attachment areas are very rugose. The thyrohyals are suboval.

As in the adult female noted above the cervicals (pl. xviii, fig. 9–11) are fused into one solid mass; there is little indication of the component bones dorso-laterally or dorsally. It differs in that the dorsal outline, as seen from the side, is concave intead of slightly convex anterior to the vertex, the dorsum is rather sharply ridged medianly and there is a lamellate expansion at the rear of the summit,

representing apparently the neural spines of the posterior cervicals. The height of the mass, about 115 mm., is subequal to the greatest width (atlas, 118 mm.). The foramina are as in the female referred to.

The neural arch of the first thoracic vertebra is complete; it is very different in shape from that of the adult female described, the neural canal being two-thirds as wide again as deep (pl. xviii, cf. fig. 4 and 12) and differs also in that the ephiphyses are quite free.

The first sternebra (text fig. 17) is broadly expanded at the front (where it is nearly one-third as wide again as long) and tapers to a broad stem; its anterior margin is sinuate, with a small median incision and there is only trace of a groove , on posterior half, indicating the fusion of the two component parts. The second segment of the sternum also consists of a single piece with a very feeble median gutter; it is four-fifths as long as the first and is widest anteriorly, where it is little more than half as broad as long, being thus considerably more elongate than in either of the other specimens recorded. In the third sternebra the two bones are completely separated.

Skull measurements of *Kogia breviceps* from South Australia.

	Sleaford Bay.		Port Victoria. Adult ♀		Port Victoria. Juvenile ♀	
	mm.	per cent.	mm.	per cent.	mm.	per cent.
Total length	351	100	410	100	250	100
Height to vertex	223	63·5	245	59·8	150	60·0
Width between postorbital processes	310	88·3	360	87·8	210	84·0
Hinder edge of occipital condyles to posterior wall of left naris	142	40·5	150	36·6	124	49·6
Height of supraoccipital from upper margin of foramen magnum to top of occipital crest	100	28·5	115	28·1	80	32·0
Width of supraoccipital at narrowest part between posterior margins of temporal fossae	200	57·0	214	52·2	155	62·0
Length of rostrum from tip to anterior wall of left naris	172	49·0	227	55·4	93	37·2
Tip of rostrum to anterior margin of palatines	136	38·8	170	41·5	76	30·4
Width of rostrum between antorbital processes	185	52·7	220	53·7	127	50·8
Greatest length of pterygoids	170	48·4	188	45·9	97	38·8
Length of left naris	43	12·3	47	11·5	33	13·2
Width of left naris	30	8·6	33	8·0	23	9·2
Height of foramen magnum	46	13·1	42	10·2	42	16·8
Width of foramen magnum	32	9·1	41	10·0	34·5	13·8
Height of occipital condyles	67	19·1	64	15·6	58	23·2
Width of occipital condyles	77	21·9	90	22·0	64	25·6
Length of mandible (mid-line between tip and level of back of condyles)	298	84·9	360	87·8	—	—
Length of left ramus of mandible (condyle to anterior end of symphysis)	320	91·2	380	92·7	—	—
Depth of left ramus at coronoid	86	24·5	100	24·4	—	—
Length of symphysis	70	19·9	80	19·5	48	19·2
Length of alveolar portion	133	37·9	140	34·2	83	33·2

Foetus, Port Victoria. Some details of the skeleton have been gleaned from an X-ray photograph. The skull is 41 mm. in greatest length; thus it is more than one-fifth of the total length of the animal, relatively much larger than in either the adult or calf. Its downward inclination (see text fig. 9) is more marked than in the adult as figured by Owen (1866, pl. xi, fig. 2). No trace of jugals can be seen.

One ossification is visible in the cervicals, immediately behind the skull and only eleven pairs of ribs are apparent. Posterior to this twenty-six ossification centres can be made out along the spinal column.

ENCOUNTER BAY RECORD?

Wood Jones (1925, p. 279) stated that in South Australia *Kogia* "is represented by a lower jaw obtained . . . . at Encounter Bay. In this lower jaw the teeth number thirteen on each side." The mandible referred to by Wood Jones has not been located with certainty in the mammalian collections of the South Australian Museum, which, at the time of the abovementioned note were being investigated by him. Apart from the examples described above, however, the only *Kogia* material in this Institution consists of a lower jaw without data and this has fourteen teeth in each ramus, the proximal one being considerably smaller than the preceding tooth.

FOOD.

The stomach of the adult female from Port Victoria contained only fragmentary remains of prawns, which appear to belong to the genera *Penaeus* and *Hymenodora*. In the stomach of the calf which, as noted above, was apparently still suckling, there were remains of numerous small Cephalopods, beaks, funnels and corneas; the Museum Conchologist, Mr. B. C. Cotton, identifies these as belonging to a common South Australian squid, *Sepioteuthis australis*.

PARASITES.

No external parasites were present but the sides of the Port Victoria cow bore about sixty circular and semicircular healed scars, apparently the result of previous attachment of barnacles. The calf exhibited a dozen or so of similar, but in general smaller, scars.

Internal parasites of the adult comprised three species of Nematoda, described as new by T. Harvey Johnston and Patricia Mawson (*Anisakis kogiae, Porrocaecum kogiae* and *Crassicauda magna*) as well as encysted larvae of a Cestode, *Phyllobothrium delphini* (Bosc)—see Johnston and Mawson, 1939. The calf contained only *Anisakis kogiae*.

MATERIAL OF *KOGIA BREVICEPS* IN SOUTH AUSTRALIAN MUSEUM.

Lower jaw and teeth, ? Encounter Bay, South Australia. Reg. No. M. 5,606.

Adult female. Half cast and complete skeleton, Port Victoria, South Australia. H. E. A. Edwardes, April 25, 1937. Reg. No. M. 5,009.

Female calf. Half cast and complete skeleton, Port Victoria, South Australia. H. E. A. Edwardes, April 25, 1937. Reg. No. M. 5,010.

Male foetus. Whole animal in formalin, Port Victoria, South Australia. H. E. A. Edwardes, April 25, 1937. Reg. No. M. 5,011.

Skull, cervicals, first and second thoracics, sternum and first rib of unsexed example, Sleaford Bay, South Australia. Miss Nancy Follett, August–September, 1944. Reg. No. M. 5,197.

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EXPLANATION OF PLATES.

Plate xiv.

Scale drawings of *Kogia breviceps*, adult female and calf, stranded at Port Victoria, South Australia.

Plate xv.

Photographs of skull of *Kogia breviceps*, adult female, stranded at Port Victoria, South Australia.

Plate xvi.

Photographs of skull of *Kogia breviceps*, female calf, stranded at Port Victoria, South Australia.

Plate xvii.

Photographs of skull and mandible of *Kogia breviceps* stranded at Sleaford Bay, South Australia.

Plate xviii.

Photographs of cervical vertebrae, etc., of *Kogia breviceps*, from Port Victoria and Sleaford Bay, South Australia.